

Answer all questions

Question one

1-Define the following terms:

- a. Endogenous System
- b. Exogenous System
- c. Closed System
- d. Open System

2- Differentiate between the following:

- a. Continuous System and Discrete Systems
- b. Stochastic model and Deterministic model
- c. Static model and Dynamic model

3-Build a simple model of a system with 1st or 2nd order positive and/or negative feedback loop (e.g. population system, bank account system, production-inventory control (Try with only one system))

Question Two

1-Write a Pseudo code for generating Pseudo random number between 0 to 1?

2- Give four pattern of behavior for Systems?

3-For the following case study Draw Data flow diagram at all levels:

Joe the bookkeeper receives bounced checks from the bank. He fills out a Balance Correction Form and forwards it to the Correction Department so that the outstanding balance can be corrected. Joe sends a bounced check letter to the customer requesting are placement check plus a \$15.00 penalty (this is now included as part of the outstanding balance). Bounced checks are never re-deposited.